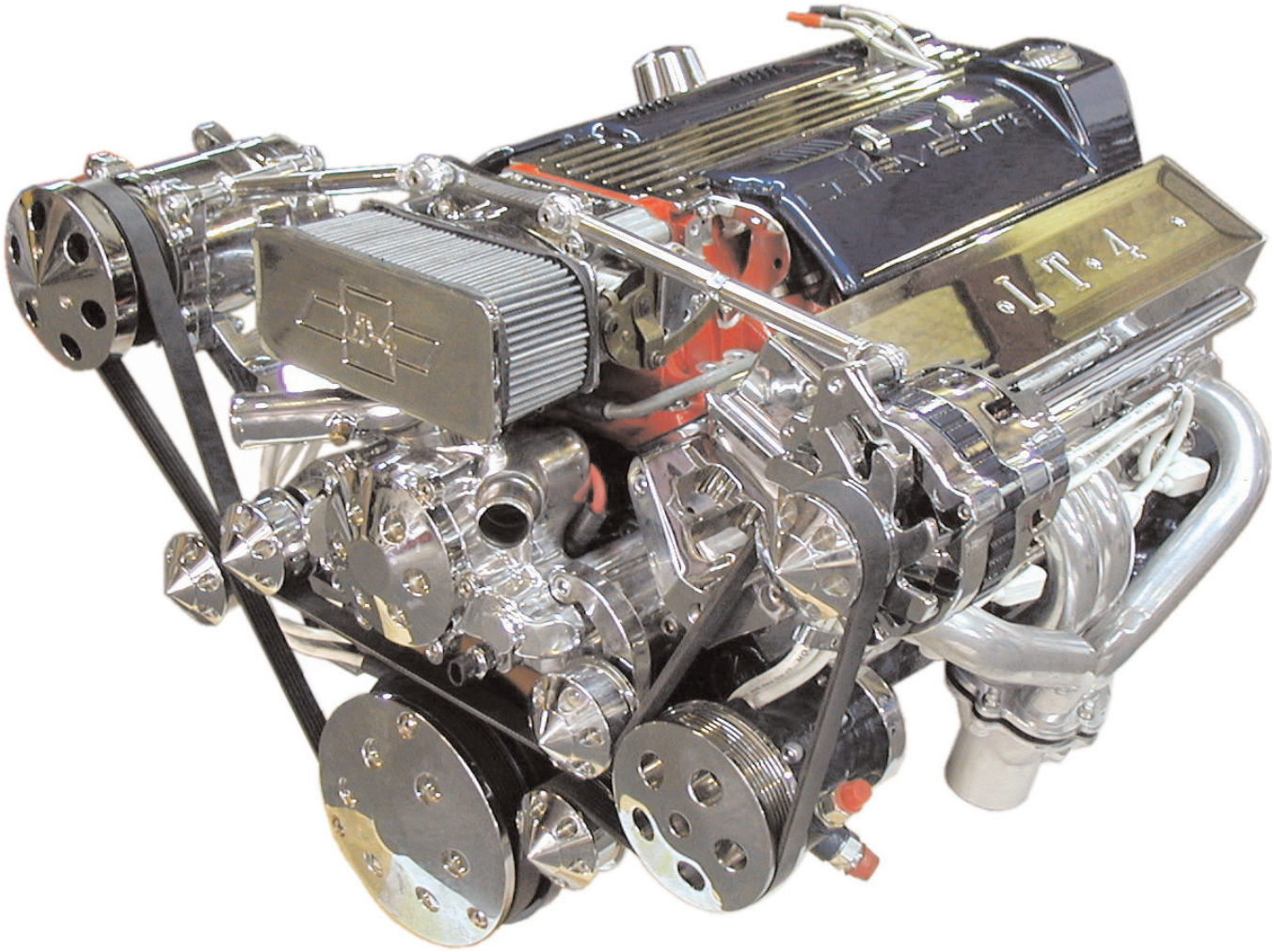
Street & Performance

96-97 LT-1/LT-4 OBDII Wiring Harness

09/08/11

INSTRUCTIONS & SUPPLEMENTAL INFORMATION



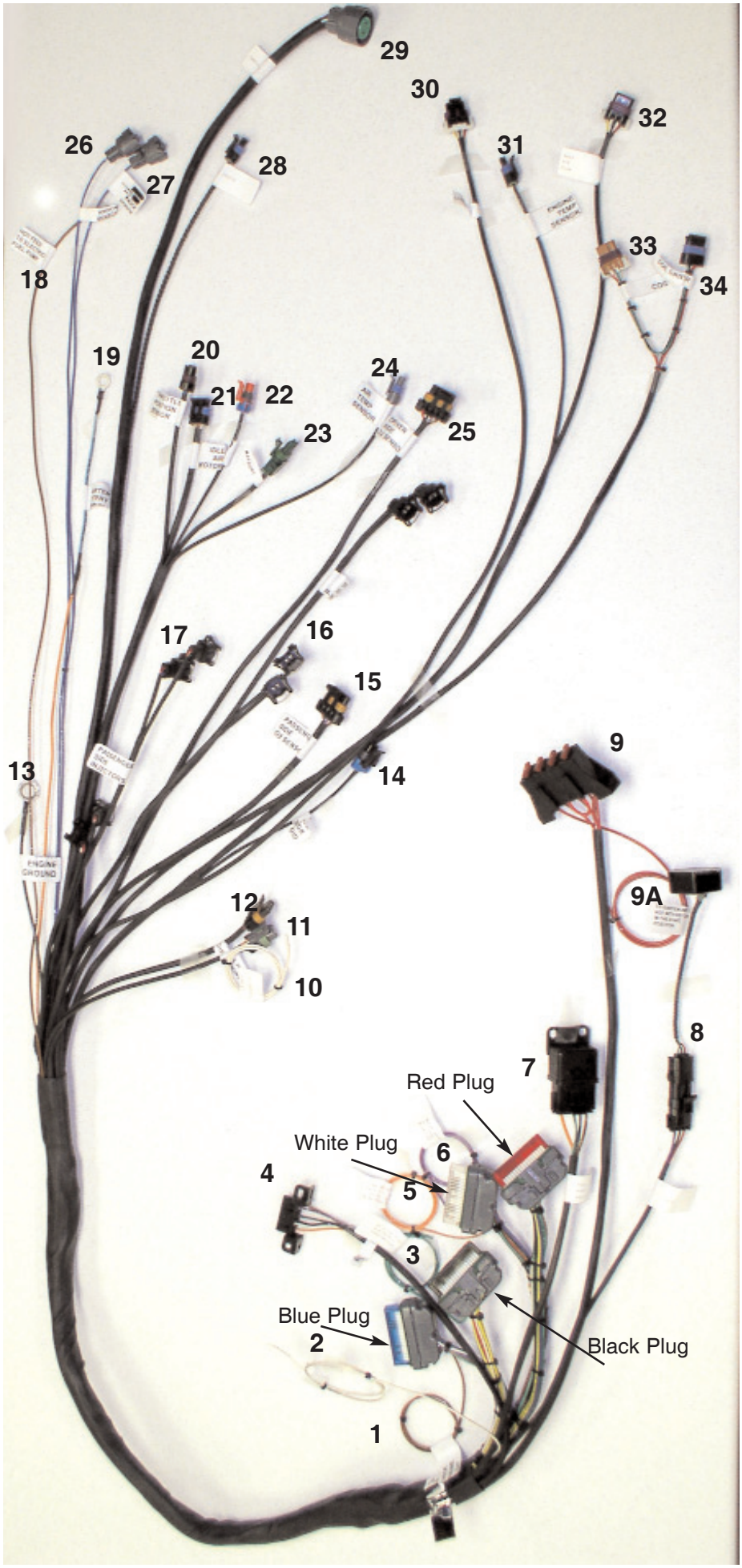
Street & Performance

#1 Hot Rod Lane ~ Mena, AR 71953
479-394-5711 ~ fax 479-394-7113
email sales@hotrodlane.cc

www.hotrodlane.cc

Visit our web ONLINE TECH page for 24 hr service.

Gauge and a Green Wire for Aftermarket Coolant Temp.



1. Check engine light.
2. Tech wire
3. 4 K pulse for speed control
4. ALDL Connector
5. Park Neutral switch
6. Brake light switch
7. Fuel Pump Relay
8. Vats bypass
9. Fuse Block

9A. 12 volts crank and run

10. Oil Pressure sending unit
11. Three prong oil sending unit plug
12. Distributor plug
13. Ground wire
14. EGR Solenoid
15. Passenger side O2 sensor
16. Passenger side injector plugs
17. Driver side injector plugs
18. Hot wire to fuel pump
19. Starter battery terminal or to battery disconnect.
20. Throttle position sensor
21. Idle air motor
22. Charcoal canister purge
23. MAP sensor
24. Air temp sensor
25. Driver side O2 sensor
26. Knock sensor
27. Knock sensor
28. Vehicle speed sensor
29. 4L60E Transmission plug
30. MASS AIR FLOW
31. Engine temp sensor
32. Crank sensor
33. Coil Plug
34. Coil Driver Plug

95-97 LT-1/LT-4 Distributor harness. Should be saved & used from factory harness. Can be purchased from S&P

Street & Performance, Inc.

• (479) 394-5711 • Fax (479) 394-7113

• Website: www.hotrodlane.cc

• E-mail: sales@hotrodlane.cc

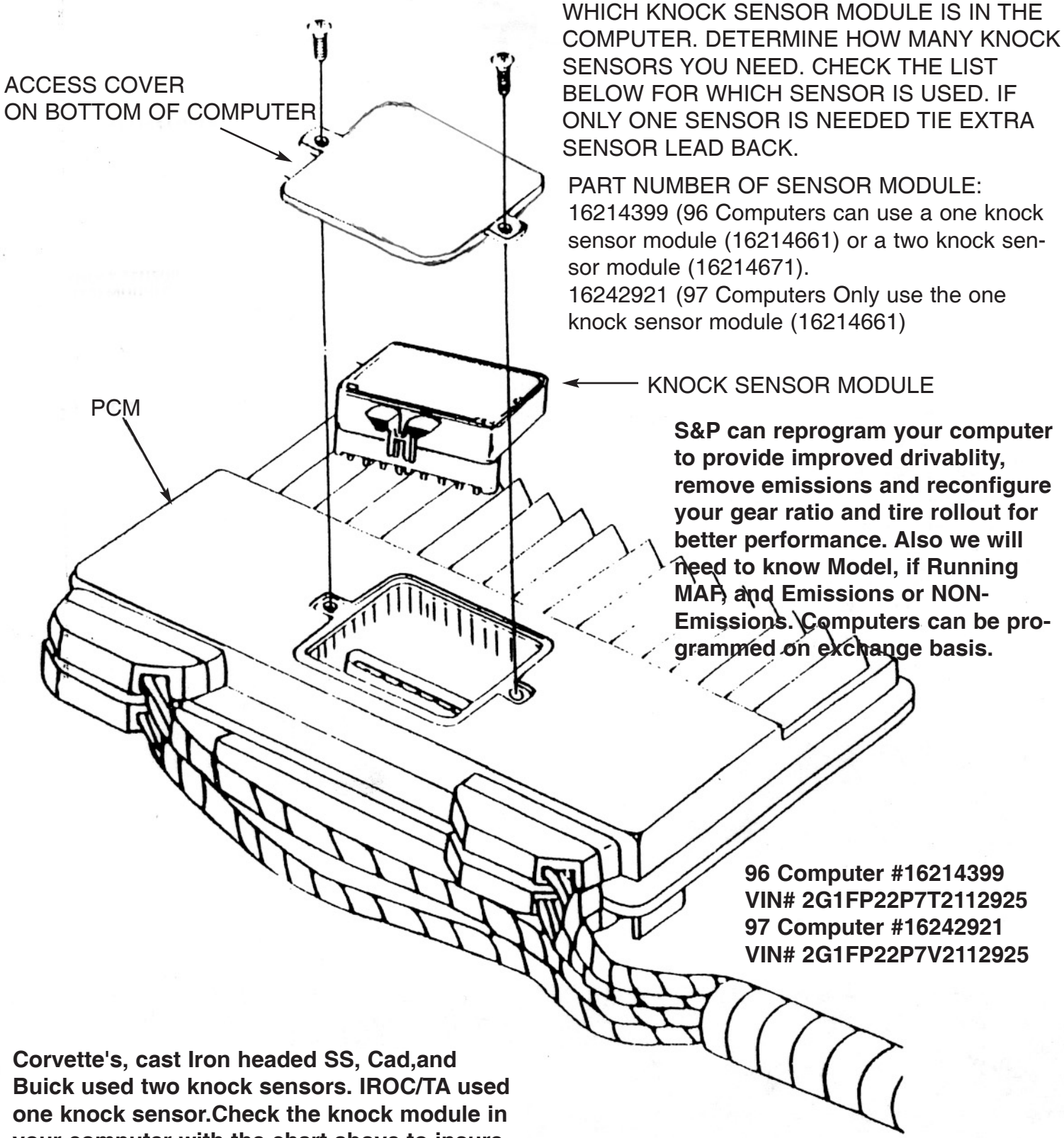
1. **Check engine light.** (brown wire) You must provide 12 volt bulb and wire that is hot with the key on and in the run position.
2. **Tech wire** (White)
3. **4 K pulse for speed control** (green wire)
4. **ALDL Connector**. (used to plug in scanning tool)
5. **Park Neutral switch** (Orange wire, if desired. closed in park neutral to ground)
6. **Brake light switch** (Purple. Normally closed. Hot all the time the ignition is on except when brake is applied)
7. **Fuel Pump Relay** (GM part #14078915)
8. **Vats bypass**
9. **Fuse Block**

9A. **12 volts crank and run** (Red. Must have 12volts in run position and a minimum of 10 volts in crank position)

10. **Oil Pressure sending unit** (White wire. For use with GM gauge. with sending unit #10201491 ONLY. with after market gauges, you must use their sending unit.)
11. **Three prong oil sending unit plug** (gray plug with green seal and brown, white and orange wires. Backup system for fuel pump. Turns fuel pump off when pressure drops)
12. **Distributor plug** (Black plug with tan seal and red, yellow, purple and black wires. Plugs into harness coming from the distributor. The distributor pig tail should be coming from the distributor.
13. **Ground wire** (black wire. Must have a good clean ground to the back of engine, and battery must ground to the engine or transmission,engine to frame and engine to body.
14. **EGR Solenoid** (Black plug with gray seal and red & gray wire. Used only in emission vehicles)
15. **Passenger side O2 sensor** (Black plug with tan seal and brown, purple, black and pink wires.)
16. **Passenger side injector plugs**
17. **Driver side injector plugs**
18. **Hot wire to fuel pump** (single brown wire)
19. **Starter battery terminal or to battery disconnect.** (Fusible link).
20. **Throttle position sensor** (Black plug with purple seal and black, gray, blue wires).
21. **Idle air motor** (Black plug with blue seal and white, red, brown, yellow wires).
22. **Charcoal canister purge** (Red plug with gray seal, red and white wires).
23. **MAP sensor** (Green Plug with green seal and gray, green, and black wires)MAP sensor must have vacuum from intake manifold.
24. **Air temp sensor** (Gray plug with blue seal and red, black wire) With S&P air cleaner, use GM sensor #25036751
25. **Driver side O2 sensor** (Black plug with tan seal and brown, purple, black and pink wires.)
26. **Knock sensor** (Gray plug with blue wire. Driver side. Not used on IROC/TA)
27. **Knock sensor** (Gray plug with blue wire.Passenger side is used on all LT-1)
28. **Vehicle speed sensor** (Black plug with blue seal and twisted yellow and purple wires). Plugs into transmission tail housing)
29. **4L60E Transmission plug** (Big gray plug). Transmission plug).
30. **MASS AIR FLOW** (Black plug with purple seal and yellow, black, and red wires) Used if desired
31. **Engine temp sensor** (Black plug with blue seal and yellow and black wires)
32. **Crank sensor** (Black plug with purple seal and red, yellow and black wires). Hooks to the lower passenger side of timing cover
33. **Coil Plug** (Beige plug with purple seal and white and red wires)
34. **Coil Driver Plug** (Black plug with blue seal and red, white, black and green wires)

THIS HARNESS IS EQUIPPED WITH TWO KNOCK SENSOR LEADS, DEPENDING ON WHICH KNOCK SENSOR MODULE IS IN THE COMPUTER. DETERMINE HOW MANY KNOCK SENSORS YOU NEED. CHECK THE LIST BELOW FOR WHICH SENSOR IS USED. IF ONLY ONE SENSOR IS NEEDED TIE EXTRA SENSOR LEAD BACK.

PART NUMBER OF SENSOR MODULE:
16214399 (96 Computers can use a one knock sensor module (16214661) or a two knock sensor module (16214671).
16242921 (97 Computers Only use the one knock sensor module (16214661)



S&P can reprogram your computer to provide improved drivablity, remove emissions and reconfigure your gear ratio and tire rollout for better performance. Also we will need to know Model, if Running MAF, and Emissions or NON-Emissions. Computers can be programmed on exchange basis.

96 Computer #16214399
VIN# 2G1FP22P7T2112925
97 Computer #16242921
VIN# 2G1FP22P7V2112925

Corvette's, cast Iron headed SS, Cad,and Buick used two knock sensors. IROC/TA used one knock sensor.Check the knock module in your computer with the chart above to insure that you have the proper module for your engine.

LT1 HARNESS INSTRUCTIONS

Visit our web ONLINE TECH page for 24 hr service.

The following instructions are intended as an aid to assist in harness installation. More in depth information can be obtained by ordering the applicable GM service manual. Trouble-shooting techniques and diagnosis are beyond the scope of these instructions. Diagnostic flow charts and trouble-shooting advice are included in the service manual or S&P's web site

The general design of the harness allows for computer mounting in the glove box area or out under the hood. If placed under the hood, position the computer to where the plug-ins are pointing downward to allow for moisture drainage. Special harness lengths can be provided on an as order basis.

All harness connections are clearly tagged. The injectors are pulsed simultaneously, so any injector plug can connect to any injector. However, the injector plug lengths will indicate which injector to connect and will result in a neat and professional installation.

The following information will briefly discuss the individual harness connections.

1.) **IGNITION:** The single ignition wire must be connected to provide 12V with the key in START (crank) and RUN position. 12V is then distributed through the fuse block to the computer (ECM), injectors and coil. The fuse block has four 10 amp fuses. Each injector bank is fused as is the computer and coil. **Stock 55-61 ignition switches DO NOT allow 12v in run position. This type of switch will need to be replaced or put a Jumper between Ignition 1 to Ignition 2.**

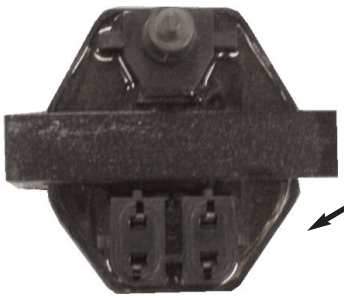
2.) **MAP-SENSOR:** Manifold absolute pressure. This sensor is provided with the harness. Run a vacuum line from a port on the passenger side of the plenum to the port on the MAP sensor. Problems with the Map sensor will cause a P0106,107,108 error code when scanned.

3.) **FUEL-PUMP-HOT-FEED:** Provides 12V to the fuel pump. A fuel pump relay is also provided with the harness and is energized/de-energized by the ECM.

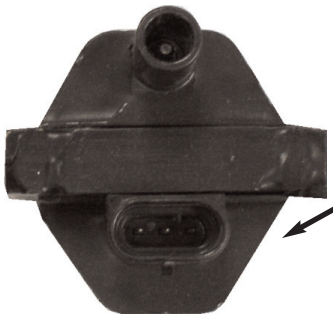
4.) **OIL PRESSURE SENDING UNIT:** Located at the rear driver side of the manifold. It is a backup system in the event the fuel pump relay should fall. Any time oil pressure is above 5 lbs. 12V is available for the fuel pump. **White wire. For use with GM gauge with sending unit, #10201491 ONLY. With after market gauges you must use their sending unit.**

5.) **ENGINE GROUND: The ground system is critical for proper operation. A good battery to motor, motor to frame, motor to body, harness ground to engine is essential.**

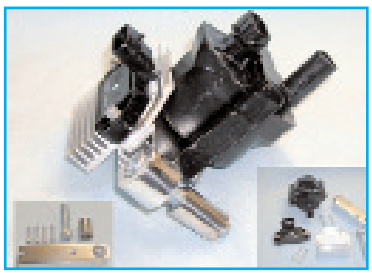
6.) **BATTERY STARTER TERMINAL:** A 14 gauge fuse linked wire is connected to the starter terminal. This provides 12V (keep alive power) to the computer. If you have a battery disconnect, you must hook this wire to the hot side of the battery disconnect. It also feeds the fuel pump relay and the oil pressure sending unit.



92-95 Coil
2 Plug
4 Pin
Connector



96-97 Coil
1 Plug
3 Pin
Connector



S&P REMOTE COIL MOUNTING BRACKET
Includes alumimun bracket, mounting bolts and spacers, and instructions

SUPPLEMENTAL INFORMATION

COMPUTER (PCM)

The PCM operates on a negative (-) ground system. Inadvertent connection of the battery leads in reverse will damage the computer. The constant battery feed to the computer should not be interrupted unless trouble codes are being erased from computer memory.

FUEL PRESSURE

For all multi port systems a high pressure electric pump in required. With Key On/Engine Off the pressure should read 45-48 lbs. With engine idling the pressure will drop off 8 to 10 lbs. **You MUST use a fuel filter that is designed for the high volume of fuel flow that is required for fuel injection such as a AC Delco GF481. Street & Performance has this filter available with mounting bracket and fittings.**

SYSTEM POWER

Full battery voltage is utilized by the injection system. Do not incorporate any ballast resistance in the ignition coil circuit or the computer ignition feed. A minimum of a 105 AMP preferably, 125 AMP or higher alternator should be used.

GAUGES

Two white wires exit the harness near the computer. One is for a tach if desired and the other is for an oil pressure gauge, (GM compatible gauges only).

DIAGNOSIS

To display diagnostic trouble codes, use a SCANNER. Grounding the DLC will not flash DTC(s), but will enable most outputs when the ignition is "ON", engine "OFF". Grounding the DLC while the engine is running will cause the MIL to flash to indicate "OPEN" or "CLOSED LOOP". This is referred to as "FIELD SERVICE MODE".

To clear the DTC's from memory use the SCANNER or:

Ignition "OFF"

Disconnect the #4 fuse (located in the instrument panel fuse block) for 30 seconds.

Since the PCM can have a failure which may affect only one circuit, following the diagnostic procedures in this section will determine which circuit has a problem and where it is.

7.) THROTTLE POSITION SENSOR: Returns a proportional voltage to the computer that relates to the angular position of the throttle plates. Relaxed throttle-low voltage (approx. 8V) wide open throttle-high voltage (approx. 4.5V).Be careful not to get TPI sensor wet when washing the engine. Problems with the throttle position sensor will cause a P0121,122,123 error code when scanned.

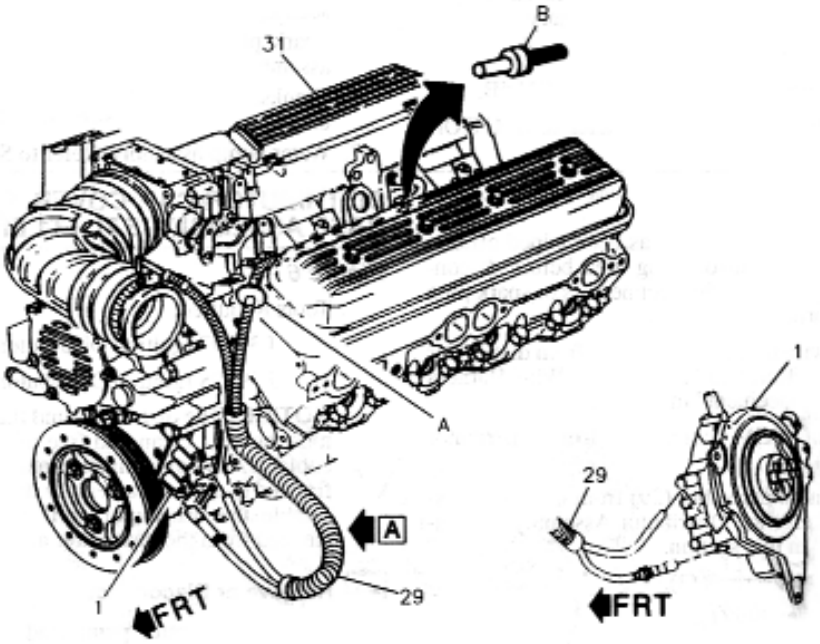
8.) IDLE AIR CONTROL VALVE: Computer controlled stepper motor which adjusts engine idle at different loads.

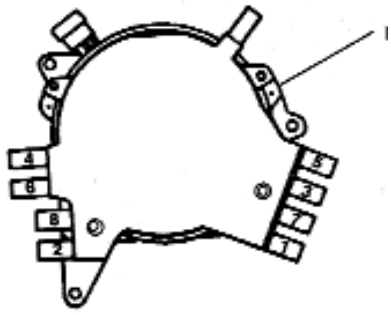
9.) COOLANT-TEMP-SENSOR: Returns a proportional voltage to the computer that relates to the coolant temp. Cold-high voltage, hot-low voltage.

10.) AIR-TEMP-SENSOR: Operates in the same fashion as the coolant temp sensor except it relates to the air temp entering the plenum.

11.) **CHECK-ENGINE-LIGHT:** One Tan wire is provided. You must provided a hot wire and bulb to use a check engine light. Any 12V automotive light will work. It can be mounted as a permanent fixture in the dash or used as a diagnostic aid only. The red wire is hot when the key is in start or run.

12.) **DISTRIBUTOR:** Located at the front of the motor and is crankshaft driven. This ignition system requires no initial timing adjustment. 95 -97 needs to have the vacuum line from the distributor with the check valve must hook to the intake vacuum port and the other line needs to be routed to the air cleaner. Be careful not to get distributor wet when washing the engine. **S&P DOES NOT recommend the used of remanufactured distributors. Use only GM or AC Delco**





FIRING ORDER: 1 8 4 3 6 5 7 2

Replacement Vacuum lines , AC Delco distributor and accessories are available from Street & Performance

13.) **AUTOMATIC-LINE-DIAGNOSTIC-LINK: ALDL,** used in conjunction with the check engine light.

14.) **OXYGEN-SENSOR:** Four oxygen sensors are used in a factory computer configuration. Two for each engine bank, one before the catalytic converter and one after. Street & Performance can reprogram the computer to remove the rear oxygen sensors as well as other emission components. When the exhaust temperature has reached 600 degrees F the oxygen sensor places the system in closed loop operation and maintains an air fuel ratio of 14.7 to 1. During wide open throttle conditions this input is ignored and a richer air fuel mixture is supplied. Problems with the front oxygen sensor will cause a error code of PO131,132,133,134,135, for bank 1 or PO151,152,153,154,155 for bank 2. Problems with the rear oxygen sensor will cause a error code of PO137,138,140,141, for bank 1 or PO157,158,160,161, for bank 2.

15.) **KNOCK-SENSOR**: Two knock sensors are used, one for each bank. If a knock is detected the computer will automatically retard the timing. **DO NOT place Knock sensor wire close to spark plug wire.**

16.) **PARK/NEUTRAL POSITION (PNP) SWITCH:** The Park/Neutral position (PNP) switch indicates to the PCM when the transmission is in park, neutral, or drive. This information is used for the EGR and the IAC valve operation. (AUTOMATIC ONLY).EGR wire can be tied up out of the way for a NON Emmission application.

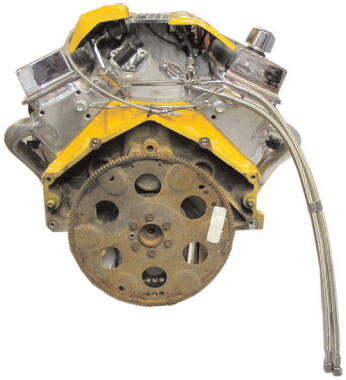
17.) **MAF SENSOR:** The scanner displays grams per second. The PCM converts the mass air flow sensor input signal into grams per second, indicating the amount of air flow entering the engine. Street & Performance can remove the MAF by reprogramming the computer and using a S&P air cleaner with a ZR1 air temp sensor, Part #25036751
Problems with the MAF sensor will cause a P0100,101,102,103 error code when scanned.

18.) **VEHICLE SPEED SENSOR (VSS):** The Vehicle Speed Sensor (VSS) is a pulse counter type input that informs the PCM how fast the vehicle is being driven. The VSS system uses an inductive sensor mounted in the tail housing of the transmission and a toothed reluctor wheel on the tail shaft. As the reluctor rotates, the teeth alternately interfere with the magnetic field of the sensor creating an induced voltage pulse.If you do not have a programmable speedometer, S&P can program you computer for your gear ratio and tire roll out to insure proper gear change and speedometer reading.

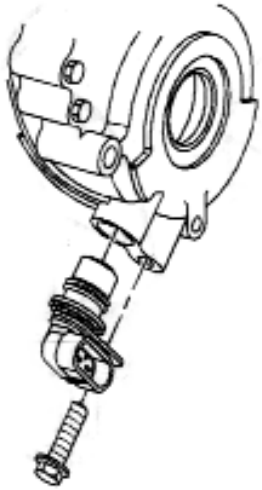
19.) **CRANK SENSOR:** Mounted in the engine front cover assembly and works in conjunction with a 4X reluctor wheel on the front of the crank shaft. The CKP sensor has a B+ power supply, a ground and a signal circuit. This PCM uses the signal to accurately measure crankshaft velocity which is a variable used to detect misfire. The sensor is NOT used for spark or fueling. Problems with the crank sensor will cause a P0335 error code when scanned.

20.) **Evap Canister Purge Solenoid - EGR:** Does not have to be hooked up on NON EMISSION 1974 and earlier vehicles.

Street & Performance EGR Block off Plate

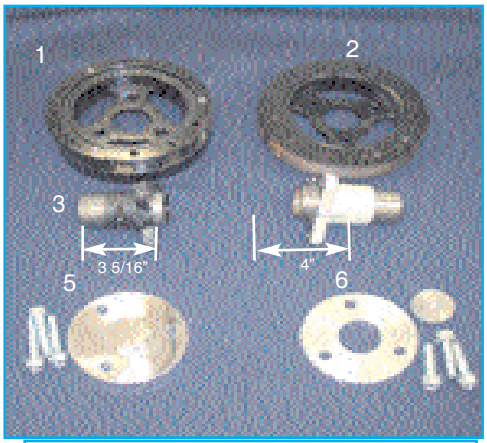


Street & Performance Rear exit fuel line kit



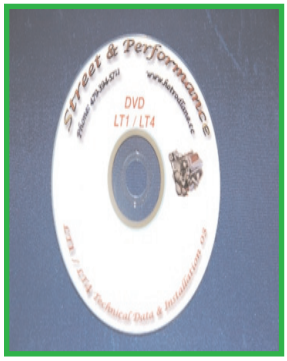
Crank position sensor

4L60E TAIL HOUSING KIT
The 4L60E Tail Housing Kit allows you to install the manual speedometer on the 4L60E Transmission while retaining electric VSS. Please specify gear ratio and tire roll-out
00000000 Tail Housing Kit . . . . . **.$375.00**



LT1 VETTE BALANCER & HUB
1.LT1 Vette Balancer.....$175.00
2.LT4 Balancer.....$338.85
3.Vette/IROC/TA Hub..... .....$88.00
4.Caprice Hub.....$88.00
5.S&P Balancer/Spacer(IROC/TA).$67.95
6.S&P Balancer/Spacer(VETTE)....$78.95

LT1 / LT4 DVD
S&P's LT1/LT4 DVD will assist you in keeping from making those costly mistakes with step-by-step instructions and troubleshooting. Your complete guide to fuel systems, cooling systems, transmissions, electronics for all LT series engines, 92 - 97
CALL FOR YOUR FREE DVD.



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#1 Hot Rod Lane
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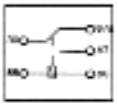
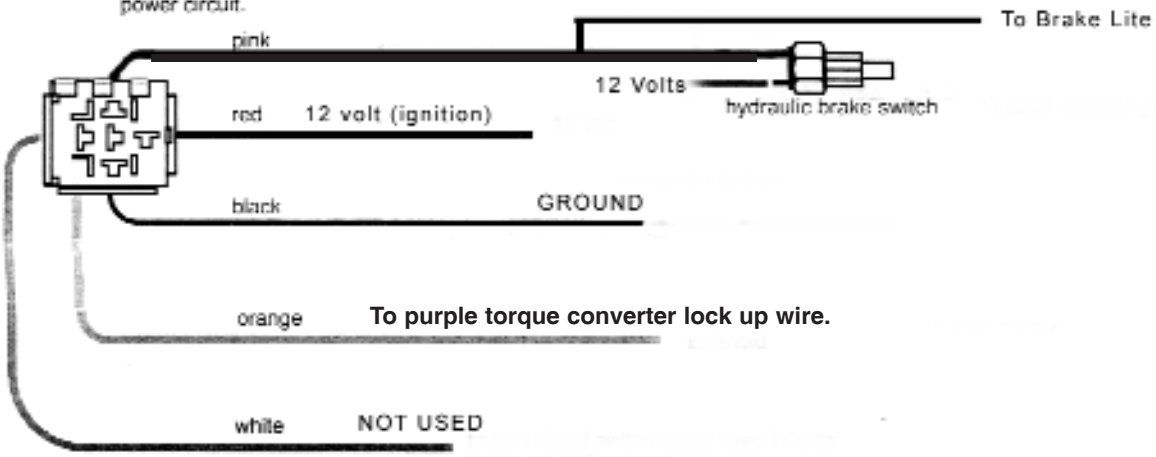
relay logic

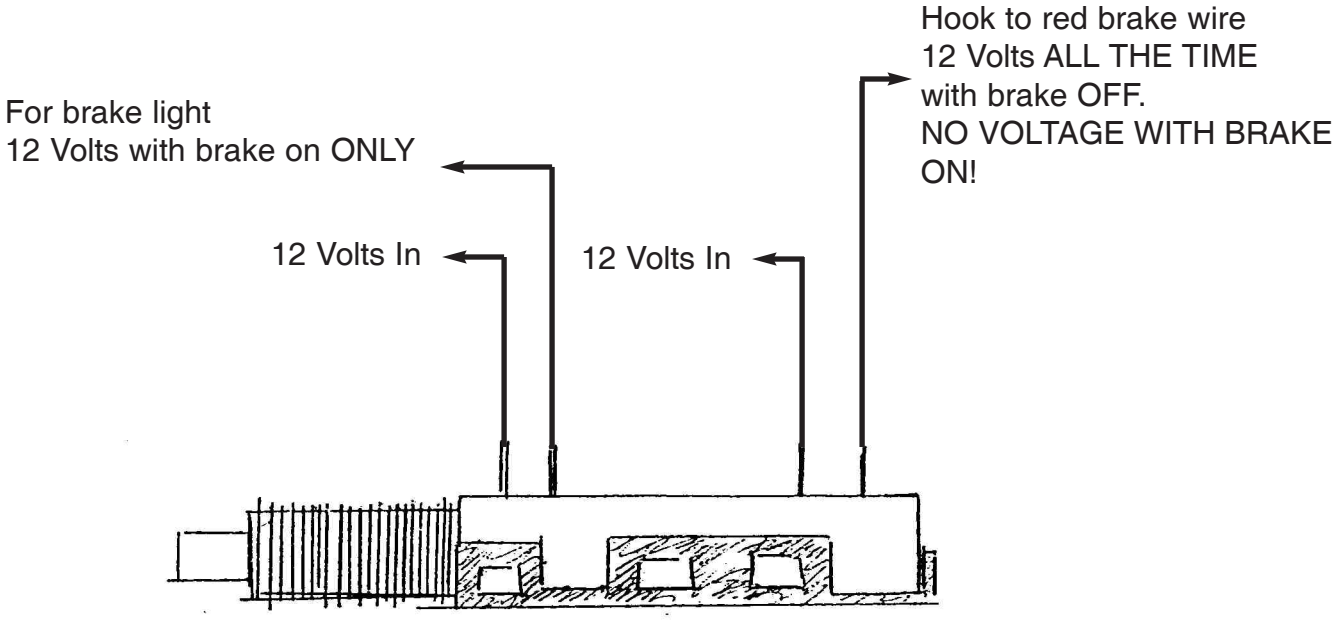


If you have a 2 prong pressure brake switch, you will need this brake switch relay kit.

BRAKE SWITCH RELAY WIRING - TCC

This set up removes the overload strain of hi-load brake lamps from the hydraulic brake switch. It is also necessary to interrupt current to the transmission torque converter lockup solenoid circuit when the brakes are applied. When the brakes are released, power is restored to the lockup solenoid power circuit.




Hook to red brake wire
12 Volts ALL THE TIME
with brake OFF.
NO VOLTAGE WITH BRAKE ON!
For brake light
12 Volts with brake on ONLY
12 Volts In
12 Volts In

GM Brake Switch #25524845
AC Delco #D850A

Code Explanation 1996-97 GM LT1

DTC P0100 MAF Sensor Circuit Insufficient Activity
DTC P0101 Mass Air Flow (MAF) Sensor Performance
DTC P0102 Mass Air Flow (MAF) Sensor Circuit Low Frequency
DTC P0103 Mass Air Flow (MAF) Sensor Circuit High Frequency
DTC P0106 Manifold Absolute Pressure (MAP) System Performance
DTC P0107 Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage
DTC P0108 Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage
DTC P0112 Intake Air Temperature (IAT) Sensor Circuit Low Voltage
DTC P0113 Intake Air Temperature (IAT) Sensor Circuit High Voltage
DTC P0117 Engine Coolant Temperature (ECT) Sensor Circuit Low Voltage
DTC P0118 Engine Coolant Temperature (ECT) Sensor Circuit High Voltage
DTC P0121 TP Sensor Circuit Insufficient Activity
DTC P0121 Throttle Position (TP) Sensor Performance
DTC P0122 Throttle Position (TP) Sensor Circuit Low Voltage
DTC P0123 Throttle Position (TP) Sensor Circuit High Voltage
DTC P0125 Engine Coolant Temperature (ECT) Insufficient for Closed Loop Fuel Control
DTC P0131 HO2S Circuit Low Voltage Bank 1 Sensor 1
DTC P0132 HO2S Circuit High Voltage Bank 1 Sensor 1
DTC P0133 HO2S Slow Response Bank 1 Sensor 1
DTC P0134 HO2S Circuit Insufficient Activity Bank 1 Sensor 1
DTC P0135 HO2S Heater Performance Bank 1 Sensor 1
DTC P0137 HO2S Circuit Low Voltage Bank 1 Sensor 2
DTC P0138 HO2S Circuit High Voltage Bank 1 Sensor 2
DTC P0140 HO2S Circuit Insufficient Activity Bank 1 Sensor 2
DTC P0141 HO2S Heater Performance Bank 1 Sensor 2
DTC P0143 HO2S Circuit Low Voltage Bank 1 Sensor 3
DTC P0144 HO2S Circuit High Voltage Bank 1 Sensor 3
DTC P0146 HO2S Circuit Insufficient Activity Bank 1 Sensor 3
DTC P0147 HO2S Heater Performance Bank 1 Sensor 3
DTC P0151 HO2S Circuit Low Voltage Bank 2 Sensor 1
DTC P0152 HO2S Circuit High Voltage Bank 2 Sensor 1
DTC P0153 HO2S Slow Response Bank 2 Sensor 1
DTC P0154 HO2S Circuit Insufficient Activity Bank 2 Sensor 1
DTC P0155 HO2S Heater Performance Bank 2 Sensor 1
DTC P0157 HO2S Circuit Low Voltage Bank 2 Sensor 2
DTC P0158 HO2S Circuit High Voltage Bank 2 Sensor 2
DTC P0160 HO2S Circuit Insufficient Activity Bank 2 Sensor 2
DTC P0161 HO2S Heater Performance Bank 2 Sensor 2
DTC P0171 Fuel Trim System Lean Bank 1
DTC P0172 Fuel Trim System Rich Bank 1
DTC P0174 Fuel Trim System Lean Bank 2
DTC P0175 Fuel Trim System Rich Bank 2
DTC P0200 Injector Control Circuit
DTC P0218 Transmission Fluid Over Temperature
DTC P0300 Engine Misfire Detected
DTC P0323 DI Low/High Resolution Circuit Intermittent
DTC P0325 Knock Sensor Module Performance
DTC P0326 Knock Sensor Noise Channel High Voltage
DTC P0327 Knock Sensor (KS) Circuit
DTC P0332 Knock Sensor (KS) Circuit Bank 2
DTC P0335 Crankshaft Position (CKP) Sensor Circuit
DTC P0336 Crankshaft Position (CKP) Sensor Circuit
DTC P0336 Crankshaft Position (CKP) Sensor Performance
DTC P0341 Camshaft Position (CMP) Sensor Performance

Visit our website for tech help in trouble shooting codes.
www.hotrodlane.cc
then click on ONLINE TECH.

DTC P0372 DI High Resolution Circuit
DTC P0400 Exhaust Gas Recirculation (EGR) System Performance
DTC P0401 Exhaust Gas Recirculation (EGR) Flow Insufficient
DTC P0403 Exhaust Gas Recirculation (EGR) Solenoid Control Circuit
DTC P0410 Secondary Air Injection (AIR) System
DTC P0412 Secondary Air Injection (AIR) Relay Control Circuit
DTC P0420 Catalyst System Low Efficiency
DTC P0420 Catalyst System Low Efficiency Bank 1
DTC P0430 Catalyst System Low Efficiency Bank 2
DTC P0441 Evaporative Emission (EVAP) System No Flow During Purge
DTC P0443 Evaporative Emission (EVAP) Purge Solenoid Control Circuit
DTC P0500 Vehicle Speed Sensor (VSS) Circuit
DTC P0502 Vehicle Speed Sensor (VSS) Circuit Low Input
DTC P0503 Vehicle Speed Sensor (VSS) Circuit Intermittent
DTC P0506 Idle Speed Low
DTC P0507 Idle Speed High
DTC P0530 Air Conditioning (A/C) Refrigerant Pressure Sensor Circuit
DTC P0531 Air Conditioning (A/C) Refrigerant Pressure Sensor Performance
DTC P0560 System Voltage
DTC P0562 System Voltage Low
DTC P0563 System Voltage High
DTC P0601Control Module Read Only Memory (ROM)
DTC P0602 Control Module Not Programmed
DTC P0704 Clutch Switch Circuit
DTC P0711 TFT Sensor Circuit Range/Performance
DTC P0712 Transmission Fluid Temperature (TFT) Sensor Circuit Low Input
DTC P0713 Transmission Fluid Temperature (TFT) Sensor Circuit High Input
DTC P0719 Brake Switch Circuit Low Input
DTC P0724 Brake Switch Circuit High Input
DTC P0740 TCC Enable Solenoid Circuit Electrical
DTC P0742 TCC System Stuck On
DTC P0748 Pressure Control Solenoid Circuit Electrical
DTC P0751 1-2 Shift Solenoid Valve Performance
DTC P0753 1-2 Shift Solenoid Circuit Electrical
DTC P0756 2-3 (B) Shift Solenoid Performance
DTC P0758 2-3 (B) Shift Solenoid Electrical
DTC P0785 3-2 Shift Solenoid Circuit Electrical
DTC P1106 Manifold Absolute Pressure (MAP) Sensor Circuit Intermittent High Voltage
DTC P1107 Manifold Absolute Pressure (MAP) Sensor Circuit Intermittent Low Voltage
DTC P1111 Intake Air Temperature (IAT) Sensor Circuit Intermittent High Voltage
DTC P1112 Intake Air Temperature (IAT) Sensor Circuit Intermittent Low Voltage
DTC P1114 Engine Coolant Temperature (ECT) Sensor Circuit Intermittent Low Voltage
DTC P1115 Engine Coolant Temperature (ECT) Sensor Circuit Intermittent High Voltage
DTC P1121 Throttle Position (TP) Sensor Circuit Intermittent High Voltage
DTC P1122 Throttle Position (TP) Sensor Circuit Intermittent Low Voltage
DTC P1133 HO2S Insufficient Switching Bank 1 Sensor 1
DTC P1133 HO2S Insufficient Switching Sensor 1
DTC P1134 HO2S Transition Time Ratio Bank 1 Sensor 1
DTC P1134 HO2S Transition Time Ratio Sensor 1
DTC P1153 HO2S Insufficient Switching Bank 2 Sensor 1
DTC P1154 HO2S Transition Time Ratio Bank 2 Sensor 1
DTC P1171 Fuel System Lean During Acceleration
DTC P1200 Injector Control Circuit
DTC P1222 Injector Control Circuit Intermittent
DTC P1336 Crankshaft Position (CKP) System Variation Not Learned
DTC P1350 Bypass Line Monitor

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DTC P1351 Ignition Coil Control Circuit High Voltage
DTC P1361 Ignition Coil Control Circuit Low Voltage
DTC P1361 Ignition Control (IC) Circuit Low Voltage
DTC P1371 DI Low Resolution Circuit
DTC P1374 Crankshaft Position (CKP) High to Low Resolution Frequency Correlation
DTC P1380 Misfire Detected - Rough Road Data Not Available
DTC P1381 Misfire Detected - No Communication with Brake Control Module
DTC P1406 Exhaust Gas Recirculation (EGR) Position Sensor Performance
DTC P1415 Secondary Air Injection (AIR) System Bank 1
DTC P1416 Secondary Air Injection (AIR) System Bank 2
DTC P1441 Evaporative Emission (EVAP) System Flow During Non-Purge
DTC P1508 Idle Speed Low - Idle Air Control (IAC) System Not Responding
DTC P1509 Idle Speed High - Idle Air Control (IAC) System Not Responding
DTC P1532 Air Conditioning (A/C) Low Side Temperature Sensor Circuit Low Voltage
DTC P1533 A/C Temperature Sensor CKT High Voltage
DTC P1539 Air Conditioning (A/C) Clutch Feedback Circuit High Voltage
DTC P1543 A/C System Performance
DTC P1545 Air Conditioning (A/C) Clutch Relay Control Circuit
DTC P1546 Air Conditioning (A/C) Clutch Feedback Circuit Low Voltage
DTC P1554 Cruise Control Feedback Circuit
DTC P1572 ASR/TCS Active CKT Low Voltage Too Long
DTC P1572 TCS Active Circuit Low Voltage Too Long
DTC P1626 Theft Deterrent Fuel Enable Signal Lost
DTC P1629 Theft Deterrent Fuel Enable Signal Not Received
DTC P1635 5-Volt Reference Circuit
DTC P1639 5-Volt Reference 2 Circuit
DTC P1641 Cooling Fan Relay 1 Control Circuit
DTC P1641 Malfunction Indicator Lamp (MIL) Control Circuit
DTC P1642 Cooling Fan Relay 2 and 3 Control Circuit
DTC P1643 Engine Speed Output Circuit
DTC P1651 Cooling Fan Relay 1 Control Circuit
DTC P1652 Cooling Fan Relay 2 Control Circuit
DTC P1652 Vehicle Speed Output Circuit
DTC P1654 Air Conditioning (A/C) Clutch Relay Control Circuit
DTC P1655 Evaporative Emission (EVAP) Purge Solenoid Control Circuit
DTC P1657 Skip Shift Solenoid Control Circuit
DTC P1661 Malfunction Indicator Lamp (MIL) Control Circuit
DTC P1662 Cruise Control Inhibit Output Circuit
DTC P1663 Charging System Lamp Control Circuit
DTC P1664 Skip Shift Lamp Control Circuit
DTC P1667 Reverse Inhibit Solenoid Control Circuit
DTC P1810 TFP Valve Position Switch Circuit
DTC P1860 TCC PWM Solenoid Circuit Electrical
DTC P1870 Transmission Component Slipping

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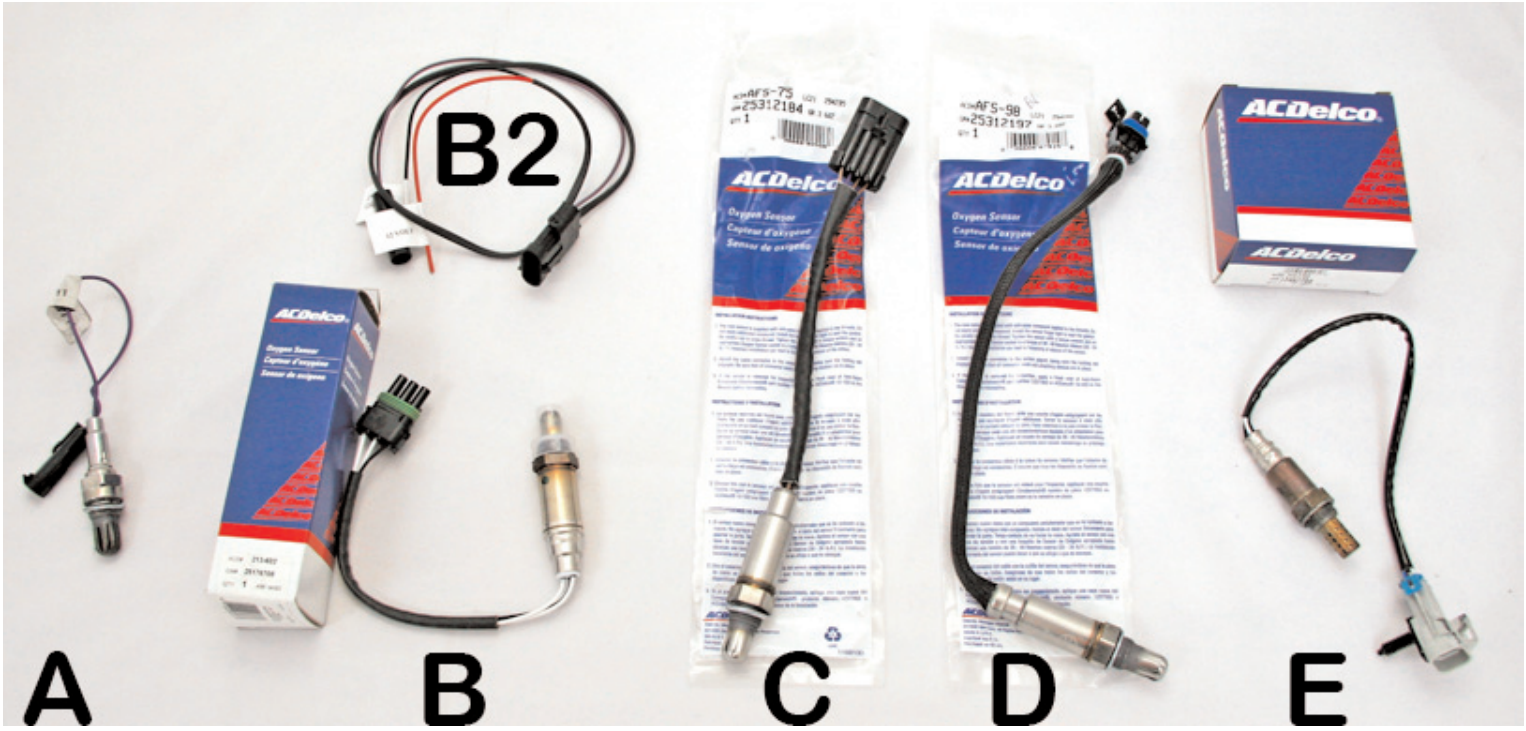

A. Throttle Body ~T.P.I ~'92-'93 LT1 (One Wire)**GM# 25166816 AC DELCO# AFS21**

B. Throttle Body ~T.P.I ~'92-'93 LT1 (Three Wire)**GM# 25176708 AC DELCO# 213-632**
B2. S&P Pig Tail to convert from One Wire System to a Heated Three Wire System

C. '94-'96 LT1 Vette~ '94-'96 BUICK, CAD., '94-'97 IROC/TA (Four Wire) O2 Sensor
GM# 25312184 AC DELCO# AFS-75 C. is also used for '97-'04 LS1 Factory Corvette Engines - S&P LS1 Harness uses IROC O2 Sensor (D)

D. '98- '02 LS1 IROC/TA Engines **GM# 25312197 AC DELCO# AFS98**

E. '05 LS2 with Square Plug **GM#12587785 AC DELCO# 213-1702**

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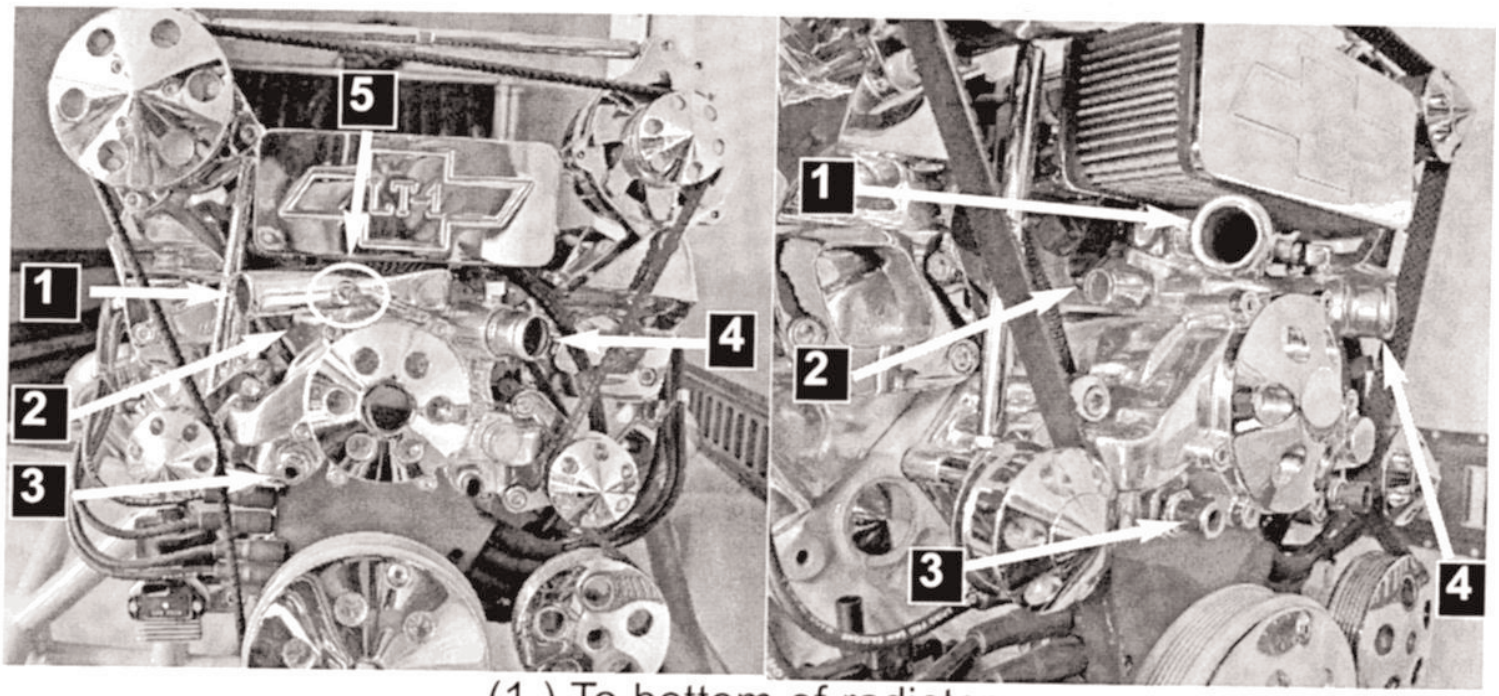
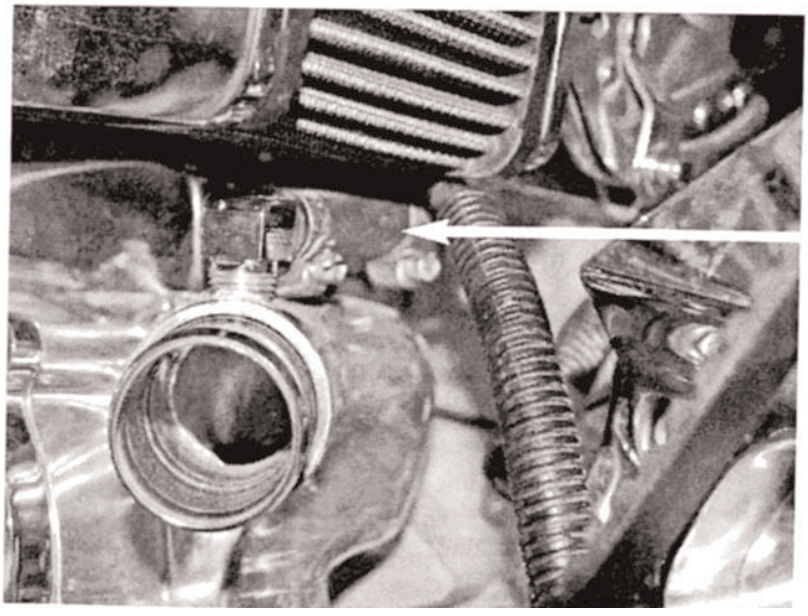
LT WATER PASSAGE



(1.) To bottom of radiator
(2.) To heater core (out from pump into heater core)
(3.) From heater core (into pump from heater core)
(4.) To top of radiator
(5.) Coolant bleed valve. Used to remove air from coolant system.



You can drill and tap the top of the water pump and install a 1/4 pipe 90 degree fitting to run a line to the bottom of the throttlebody or you can run a line from the bottom of the throttlebody to a "T" in the radiator hose. This "T" can be purchased from S&P.